SIEMENS

MOBILETT XP Digital

SP

Quality Assurance

System

Quality Assurance

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System overview

System ID:

Material no.:..... Serial no.:.....

Customer:..... .....

Address: ..... City:.....

State/province: ..... Country:.....

Telephone: ..... Contact:.....

Check	Check during:	Date
❒	Start-up	
❒	Maintenance	
❒	Service	

Tester: Name: .....

Date: ..... Signature: .....

Measuring device

Date: _____

Required measuring equipment

- Standard service tool kit — n.a.
- 2.1 mm precision copper filter or a copper filter set (44 06 120 RV090) — 99 00 598
- Dose meter, e.g.: PTW DIADOS — 97 17 612 Y0388
- Densitometer, e.g., DensiX-LE 52003 (only for hardcopy) — 49 51 286 Y0388
- Test phantom, e.g., PTW Norm 13 — n.a.

Measuring equipment used

Measuring equipment for start-up	Abbreviation	Serial no.	Calibration successfully completed?	
			Yes	No
Dose meter				
Measurement chamber				
Densitometer (only for hardcopy)				
Test phantom				

Touch screen display

Date: _____

The controls for adjustment and display calibration are on the back of the touchscreen display.

- MOBILETT XP Digital is switched on.
- Create patient "BQ test", select the "SMPTE" organ program and wait until "READY" is displayed.
- Release an exposure (release occurs without X-rays).
  - ➪ The “SMPTE” image is displayed.
- Select "enlarge" to be able to evaluate the 5% fields.
- Adjust brightness and contrast values of touch screen display (see back of touch screen display). The 5% and 95% fields must be visible.
  - ➪ Move the contrast adjustment toward + until the 95% field disappears, and then back a bit.
  - ➪ Black field: approx. 0.6 - 0.9 cd/qcm
    White field: approx. 150 cd/qcm +/- 20

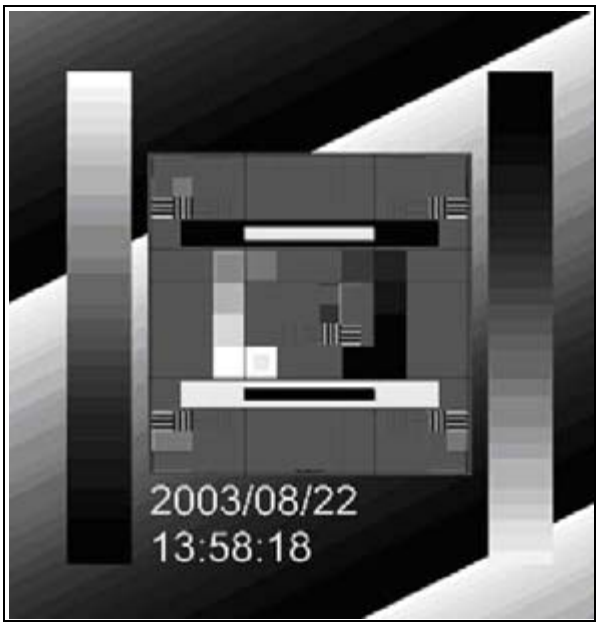

Fig. 1: SMPTE

Dose measurement (dose indicator)

Date: _____

Start-up check only:

- Remove grid of CXDI detector.
- Center the dose measurement chamber on the CXDI detector and with respect to the tube assembly. (SID 115 cm).
- Select the transmission dose on the dose meter (PTW Diados dose meter filter 27.5 mm)
- Attach the 2.1 mm precision CU filter to the collimator
- Collimate to approx. 32 cm x 32 cm on the CXDI detector
- Create a patient "IQ test" and select "Organ programs" under "Test" in accordance with the table

- Release exposures according to table
  - Enter the measured dose values in the table (sample values are entered in the table)
  - Read the determined EXI values of the software application from the CXDI PC and enter them in the table (sample values are entered in the table)
  - Evaluate artifacts or defective pixels on the monitor of the CXDI PC display, enter them in the table below, and document them under Remarks

Organ program	**CU**	**Ua (KV)**	**Q (mAs)**	**K_B actual (µGy)**	**K_B*1 (µGy)**	**EXI Actual**	**EXI *2 Reference value**
Dose 1	2.1mm	70	16		2.7		370
Dose 2	2.1mm	70	63		11.0		1500
Dose 3	2.1mm	109	0.71		2.6		330

U_a = exposure voltage in KV; Q = mAs; K_B = transmission dose; EXI= exposure index; *1/ *2 = reference system sample values

1 µGy = 115 mR

Artifacts:	Defective pixels	Yes❒	No ❒
	Defective lines	Yes❒	No ❒
	Other defects	Yes❒	No ❒

Remarks: _____

Constancy test with test phantom Norm 13

Date: _____

- Remove grid of CXDI detector.
- Test phantom (e.g.: Norm 13) place on the CXDI detector, align centrally, and center with respect to the tube assembly. (SID 115 cm).
- Adjust the collimator to the measurement phantom.
- Create a patient "IQ test" and select "Organ program" under "Test" in accordance with the table

- Release exposure according to table

Resolution and contrast

- Evaluate the resolution on the monitor in the region of the resolution test of the test phantom (e.g.: Norm 13) and enter the results in the table. Use the functions “Define ROI”, “Shutter” and “ QA zoom” to optimally evaluate the resolution.
- Read off the measured EXI values of the software application from the CXDI PC and enter them in the table.
- Evaluate the contrast base on the test phantom (e.g.: Norm 13) in the region of the copper dynamic step wedge and enter the results in the table.

  All 7 grayscales must be visible; to achieve this, the windowing can be changed.
- Check low contrast areas and enter the results in the table.

Organ	**Ua**	**Q**	**Resolution**		**Contrast levels visible?**		**EXI**	
Program	**(KV)**	**(mAs)**	**Actual**	**Target**	**Y/N**	**Range**	**Actual**	**Ref.*1**
Constancy 1	70	9.0		>= 2.8		7 contrast levels		1200
Constancy 1	n.a.	n.a.	n.a.	n.a.		Minimum of 3 visible contrast ranges	n.a.	n.a.

Organ	Ua	Q	Resolution		Contrast levels visible?		EXI	
Program	**(KV)**	**(mAs)**	**Actual**	**Target**	**Y/N**	**Range**	**Actual**	**Ref.*1**
Constancy 2	70	2.8		>= 2.5		Minimum of 4 visible contrast ranges		350
Constancy 3	125	0.71		>= 2.0		Minimum of 2 visible contrast ranges		1270

U_a = exposure voltage in KV; Q = mAs; EXI = exposure index; *1 = reference system sample values

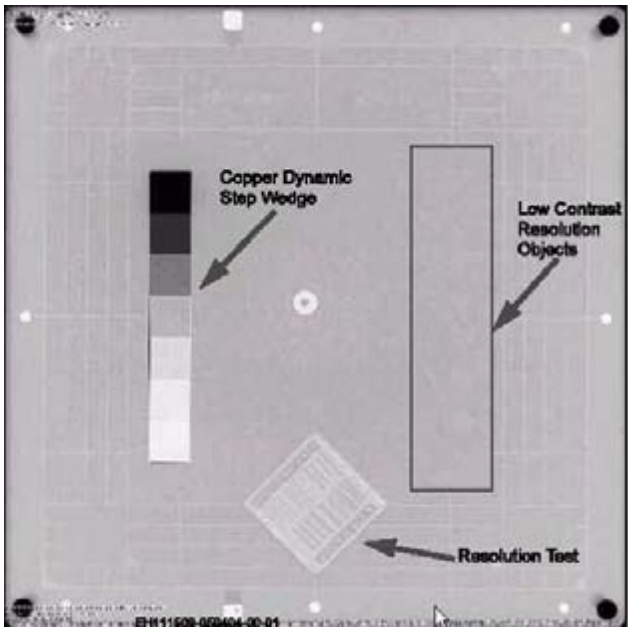

Fig. 2: Resolution and contrast

Remarks: _____

_____

_____

Hardcopy

Date: _____

Hardcopy camera type:_____; **Serial no.:**_____

This test is required if a hardcopy camera has been configured.

For further information, refer to: General Hardcopy Information SPR8-230.814.40.01...

- MOBILETT XP Digital is switched on.
  - ➪ Brightness and contrast of CXDI touch screen monitor are set to optimum levels.
- Create patient "IQ test", select the "SMPTE" organ program and wait until "READY" is displayed.

- Release an exposure.
- Select "END STUDY"
- Send the "SMPTE" image to the installed hardcopy camera.
- Measure the densitometry of fields 0% (black), 40% and 100% (white) in film and enter the results in the table.

Densitometry/ Measurement field	**ACTUAL**	**TARGET**
0% (black)		>2.7
40%		1 +/- 0.2
100% (white)		< 0.25

- Evaluate the visible fields in film and enter them in the table.

5% field is visible	Yes❒	No ❒
95% field is visible	Yes❒	No ❒
Structure in the center is visible	Yes❒	No ❒

Remarks: _____

_____

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12 Changes to Previous Version

Chapter	Page	Revision
All	n.a.	Editorial changes, reference values updated